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ABSTRACT

The Oklahoma Educational Status Study was conducted to determine student achievement in reading and mathematics. A stratified random sampling of students in grades 3, 6, and 9, were administered the mathematics and reading subtests of the California Achievement Tests (CAT); twelfth grade students were administered only a criterion-referenced test, the Senior High Assessment of Reading Performance (SHARP). For grades 3, 6, and 9, the following conclusions were reached: more students scored above, rather than below, their grade levels in reading and mathematics; third grade students scored higher in reading than in mathematics; students were achieving as well or better than national norms; and at every level, for both reading and mathematics, more students scored above, rather than below, the average. The following objectives were measured by SHARP: following directions, getting information, and using maps and forms. It was determined that: 93 percent achieved at or above the mastery level; students achieved a higher level of mastery in the section on reading for information than on the other two sections; and performed as well or better than students in most other states that have given the test. (MH)

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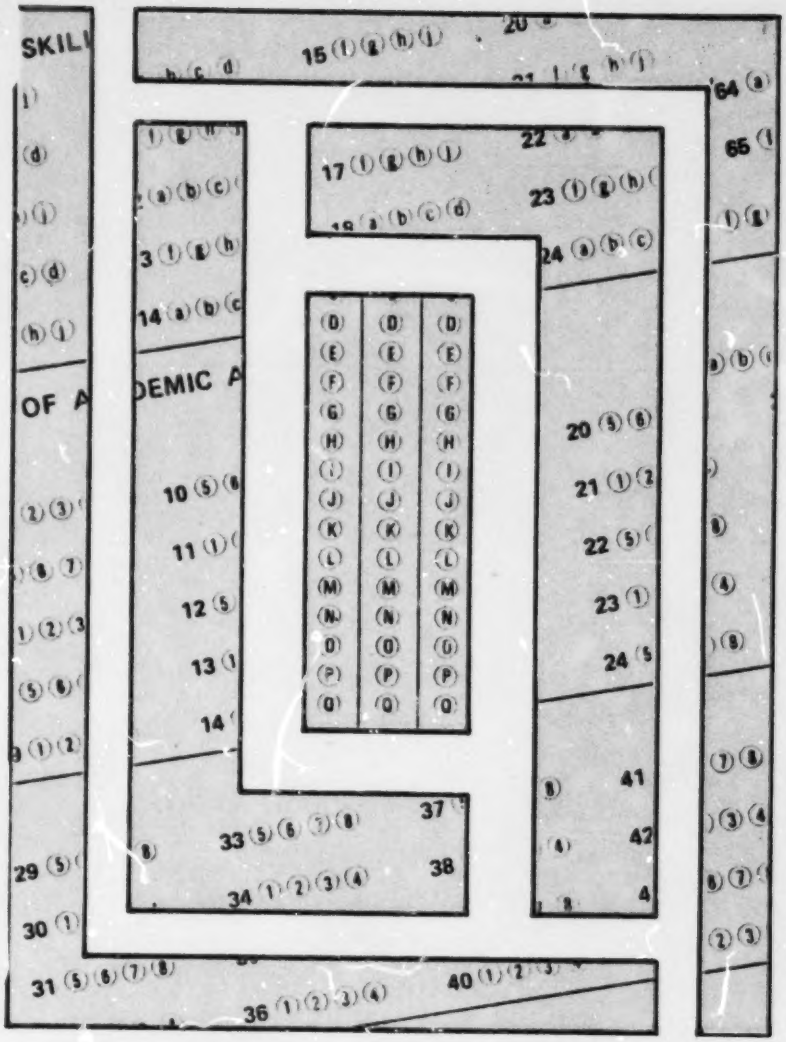

Oklahoma Educational Status Study

READING and MATH

GRADES 3, 6, 9, 12

School Year 1977-78

Submitted by

DR. LESLIE FISHER
Oklahoma State Department of Education

TM009 881

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Oklahoma State Department of Education
Leslie Fisher, State Superintendent

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Foreword

The Oklahoma Educational Status Study was conducted for the purpose of attempting to determine the achievement level of students in the public schools of Oklahoma, specifically, in the basic skill areas of reading and math. In conducting this study, a stratified random sampling of students in grades three, six, nine and twelve was utilized.

Students in grades three, six and nine were administered a standardized norm-based test in the areas of reading and math. The twelfth grade students were administered the SHARP (Senior High Assessment of Reading Performance) test. The reading test for grades three, six and nine encompassed the areas of vocabulary and comprehension. The math test covered the areas of computation, concepts and applications; while the SHARP test measured basically the ability of a high school student to read and respond to materials typically encountered by adults in their daily lives.

In an attempt to select the most appropriate tests for this study, a test selection committee in the State Department of Education analyzed the test materials from several major testing vendors and subsequently selected the test produced by CTB/McGraw-Hill.

The results of these tests will be categorized by grade, showing the achievement level of Oklahoma students in the particular grades as compared with national norms. In addition, the average achievement for the state as a whole will be shown. The sampling procedure utilized will not allow conclusions to be drawn about individual school sites, districts and/or regions. Conclusions can only be projected to the state as a whole.

Methodology

Sampling Procedure

The State Department of Education engages in several data collection activities during every school year. In addition to standard reporting procedures, special studies are often conducted. Thus, in 1977-78, it became necessary to design a procedure that would provide representative sampling without asking districts to provide data for more than one study and thus add unnecessarily to their record keeping.

All the school districts in the state were listed by region and by school size. The regions were those developed by the Department of Tourism except that a metropolitan area was added by grouping Tulsa, Oklahoma and Cleveland counties. The school size grouping was based upon 1976-77 ADA figures. Small schools were those with ADA 0-249; medium schools had ADA 250-999, and large schools had ADA 1000+.

The director of each study determined total sample size based upon consideration of the questions to be answered, the economic constraints imposed on the study and the data collection and analysis methods. Some studies sampled proportionately by ADA, others proportionately by number of districts in each cell. The school districts were listed within each cell in random order using a table of random numbers. They were then used for each study as the study was designed and implemented. The first study used as many as were needed in each cell to make up the sample required. The second study and each subsequent study used the next districts on the list. The Educational Status Study was the third study to use the stratified, randomly ordered list. The procedure provided a sample similar to samples used by publishing companies when they build norms for a test.

The sample size was determined by consideration of the number needed to make generalizations about the students of Oklahoma and the constraints imposed by the amount of funds allocated for the study. At each grade level 2000 students was set as an adequate number to allow generalization.[1] In Table 1 is a list of the geographic regions and the number of students projected for each school size within a region. Also reported is the number of students actually tested in each cell.

The number of school districts needed to achieve the projected sample size was 36. In small school districts all third, sixth, ninth and twelfth grade students were tested, while in large districts a random sample not larger than 100 students was selected at the specified grade levels so that no district represented more than 5 percent of the sample.

The sample size is entirely adequate to make generalizations about state achievement, but there are not enough in each cell to draw conclusions about districts or regions.

Data Collection Procedures

Superintendents in the 36 districts were contacted to request the participation of their students. All cooperated by serving as coordinator or by designating a testing coordinator.

The testing was done by local school district personnel after a State Department staff member delivered testing materials and conducted an inservice session to acquaint local personnel with the purposes and procedures of the status study. There were 23 staff members from the State Department of Education who worked with the local districts, assisting with testing when requested and gathering materials to return to the department. For most districts two trips were required to provide inservice, distribute and collect materials. All testing was completed by the end of November.

When the results were received at the State Department, this report was prepared for distribution in early February. Results were aggregated for the entire state. The remainder of the report will compare the achievement of Oklahoma students in reading and mathematics with the national norm group. Results will also identify areas of strength and areas for improvement in basic skills and in survival skills.

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[1] Seymour Sudman, APPLIED SAMPLING (New York: Academic Press, 1976).

Table 1
Sample for 8000 Students[1]

8,000
4 grades — 2,000 per grade
Grades 3-6-9-12

TOTAL ADA (Best 3 of 4 Quarters, 1976-77) BY REGION AND SCHOOL SIZE

Region	Small (0-249)	%	Sample[2]	Medium (250-999)	%	Sample[2]	Large (1000+)	%	Sample[2]	Total	%	Sample[2]
Central	5,214	0.95	76 (75)	22,619	4.10	328 (261)	27,874	5.06	405 (405)	55,707	10.11	809 (741)
Northeast	9,218	1.67	134 (93)	32,402	5.88	470 (361)	60.757	11.03	882 (494)	102,377	18.58	1,486 (948)
Northwest	6,549	1.19	95 (105)	16,013	2.91	233 (135)	23,907	4.34	347 (377)	46,469	8.44	675 (617)
Southeast	3,299	0.60	48 (--)	17,168	3.12	250 (203)	14,263	2.59	207 (420)	34,730	6.31	505 (623)
South Central	4,346	0.79	63 (78)	15,555	2.82	226 (129)	16,389	2.97	238 (411)	36,290	6.58	527 (618)
Southwest	6,336	1.15	92 (90)	20,833	3.78	302 (280)	18,113	3.29	263 (417)	45,282	8.22	657 (787)
Metropolitan	434	0.08	6 (32)	6,229	1.13	90 (129)	223,546	40.57	3,246 (2,304)	230,209	41.78	3,342 (2,465)
TOTALS	35,396	6.43	514 (473)	130,819	23.74	1,899 (1,498)	384, 849	69.85	5,588 (4,828)	551,064	100.2[3]	8,001 (5,799)

[1] Four grades, 3 - 6 - 9 - 12, were tested. 2000 students were tested at each grade level.

[2] The number of students needed for each cell is projected by calculating the cell percent of the total sample size. The number actually tested is reported in parentheses in each cell.

[3] Rounding error accounts for a slight discrepancy in the totals.

Third, Sixth and Ninth Grades

The test series selected for testing third, sixth and ninth grade students was the California Achievement Tests (CAT), Forms C & D, published by CTB/McGraw-Hill. In the interest of saving student and teacher time, the entire battery was not administered. Only reading and math subtests were given.

Test Selection

The test selection committee carefully considered current products from several test vendors. The selection was based on several considerations. One advantage offered by the CAT was that it was a new edition normed in 1976-77 with the fall norms that were essential for the fall test date of the status study. Other advantages were that separate levels were available for each grade; practice tests were provided; summary reports were available. One important feature was that scores were not only reported in terms of the national norms (see Figures 1-6) but were also referenced to objectives (see Figures 7-9). Thus scores could be interpreted to provide information about areas of strength and areas for improvement.

Purpose for Administering CAT

The purpose for administering a standardized achievement test was to provide information about Oklahoma students. Are they able to read and compute as well as students in other states? Many reports in recent years have suggested that students do not have the basic skills; thus, a second question focused on the basics. Are Oklahoma students lacking in basic skills?

The data were organized to provide the information necessary to answer the two questions. First, scores from Oklahoma students were compared with the national norm group (Figures 1-6 and Table 2). Second, the number of Oklahoma students who passed basic skills objectives were compared with the number in the national norm group (Figures 7, 8, 9).

A third purpose for administering a standardized test was to describe the average achievement at each grade level in reading and math. In Table 2 are presented the average grade level scores for the national and state samples.

Conclusions for Grades 3, 6 and 9

1. More students in third, sixth and ninth grades scored above their grade level than below their grade level. This was true for both reading and mathematics.
2. At third grade level, more students scored above grade level in reading than in math, which may reflect the greater emphasis placed on reading in the primary grades.
3. At sixth and ninth grade levels there was a wider range of achievement.
4. Students in Oklahoma were achieving the basic skills objectives as well as or better than the national norm group.
5. At every level, for both reading and math, more students scored above the average range than below the average range.

Figure 1

THIRD GRADE: Reading

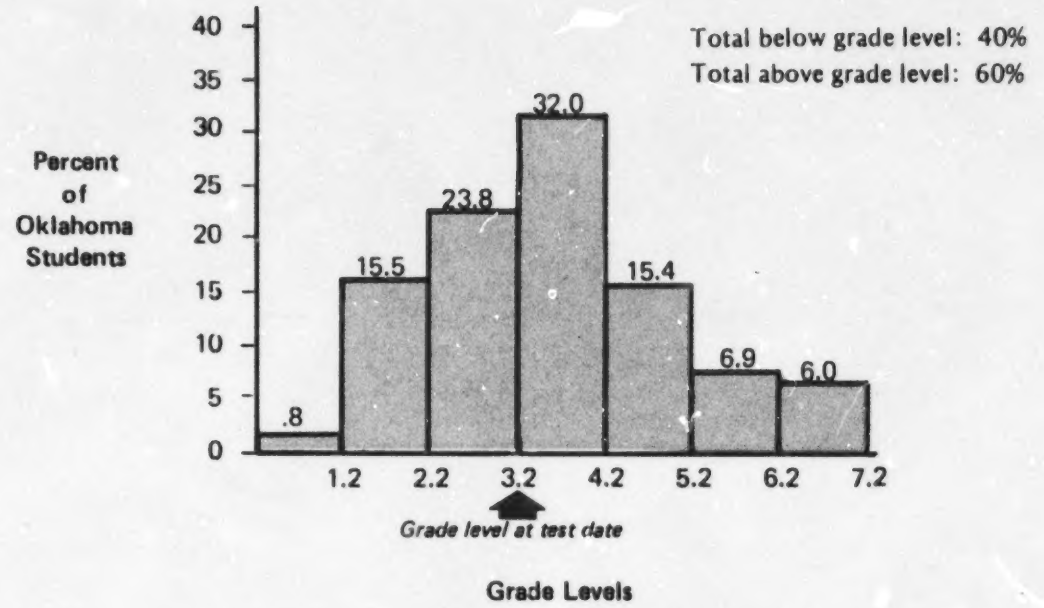


Figure 2

THIRD GRADE: Mathematics

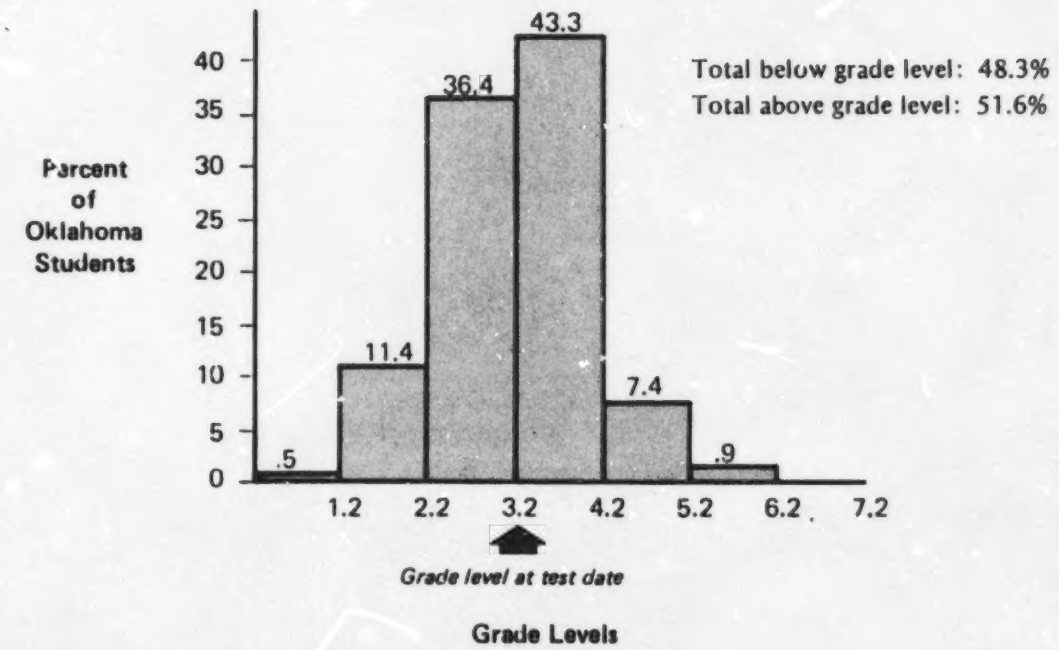


Figure 3

SIXTH GRADE: Reading

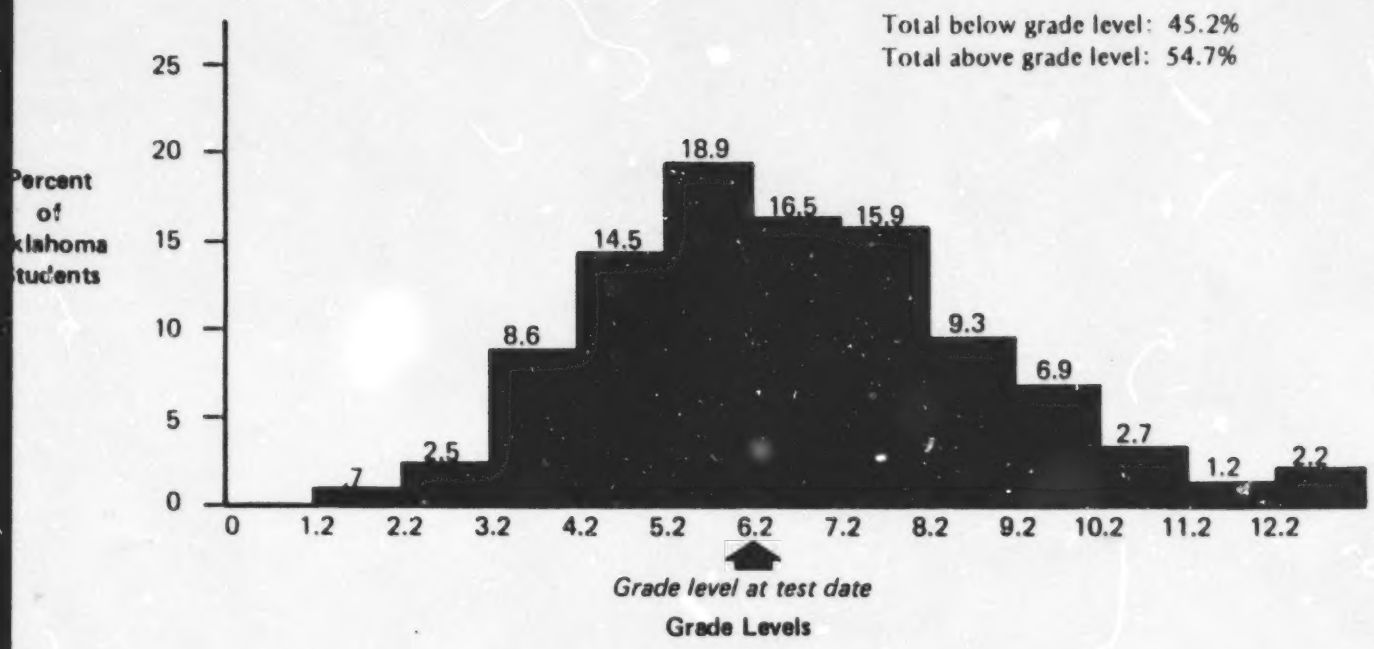


Figure 4

SIXTH GRADE: Mathematics

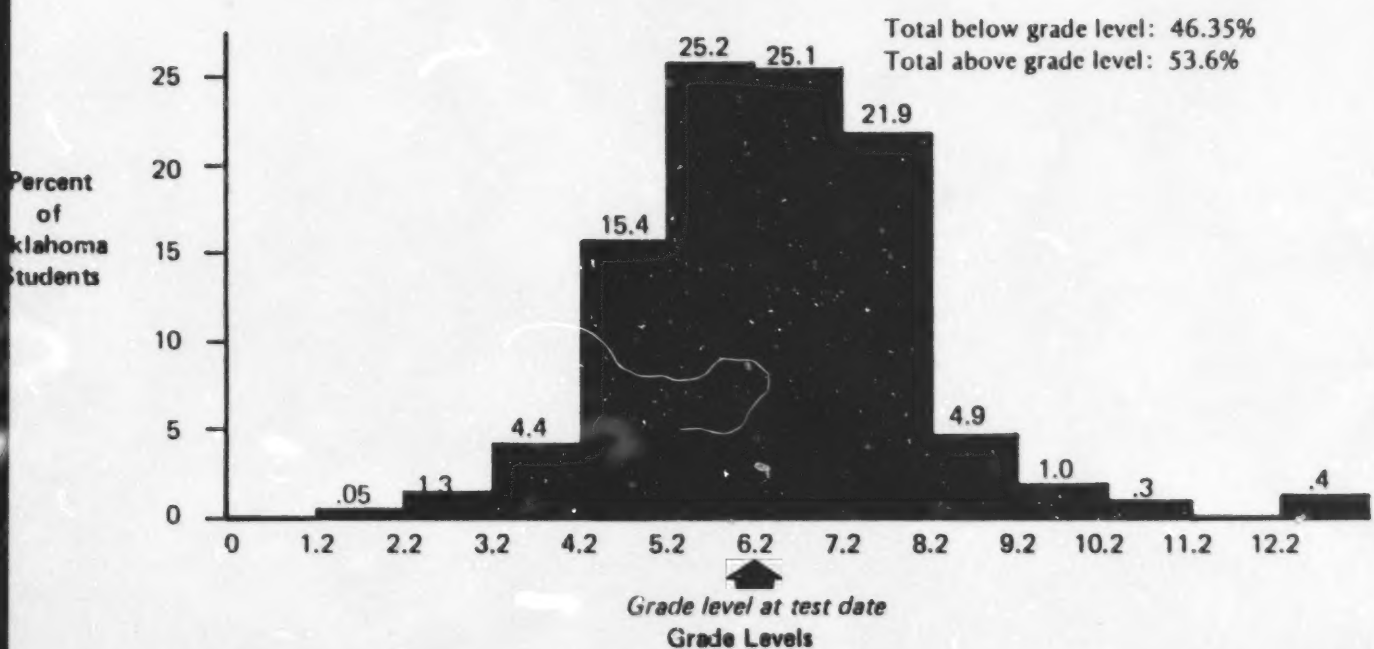


Figure 5

NINTH GRADE: Reading

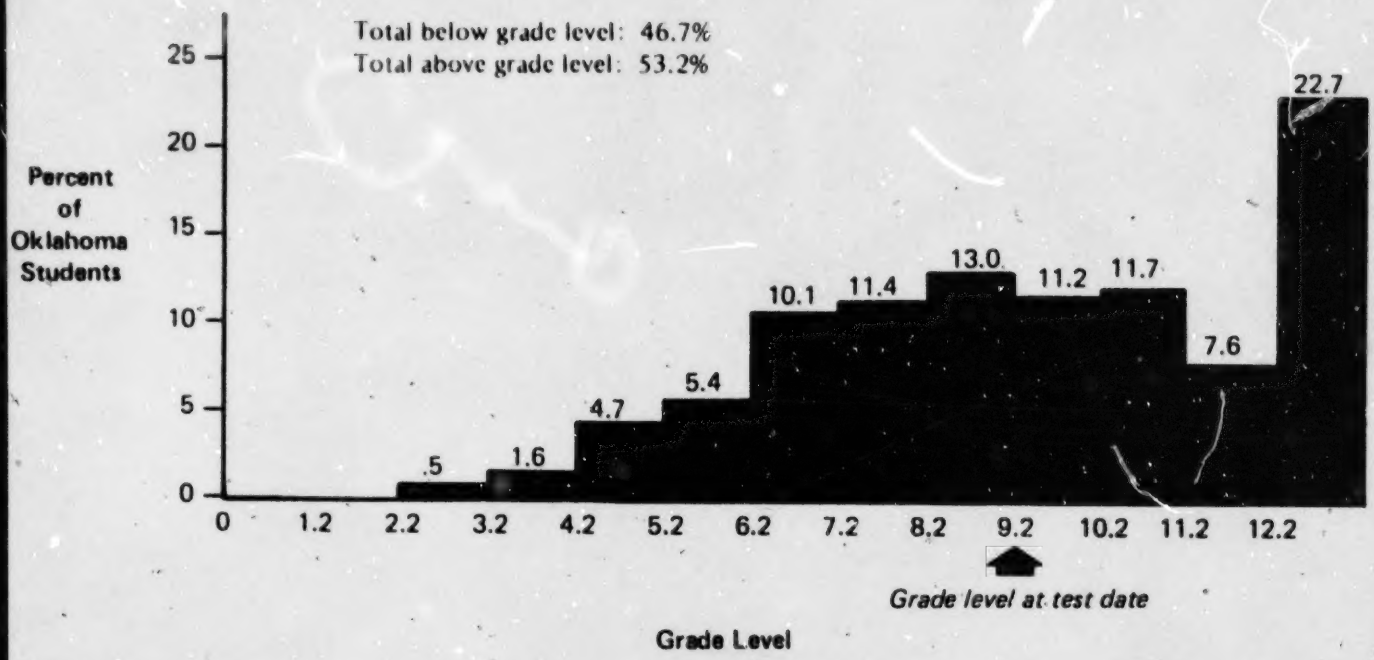


Figure 6

NINTH GRADE: Mathematics

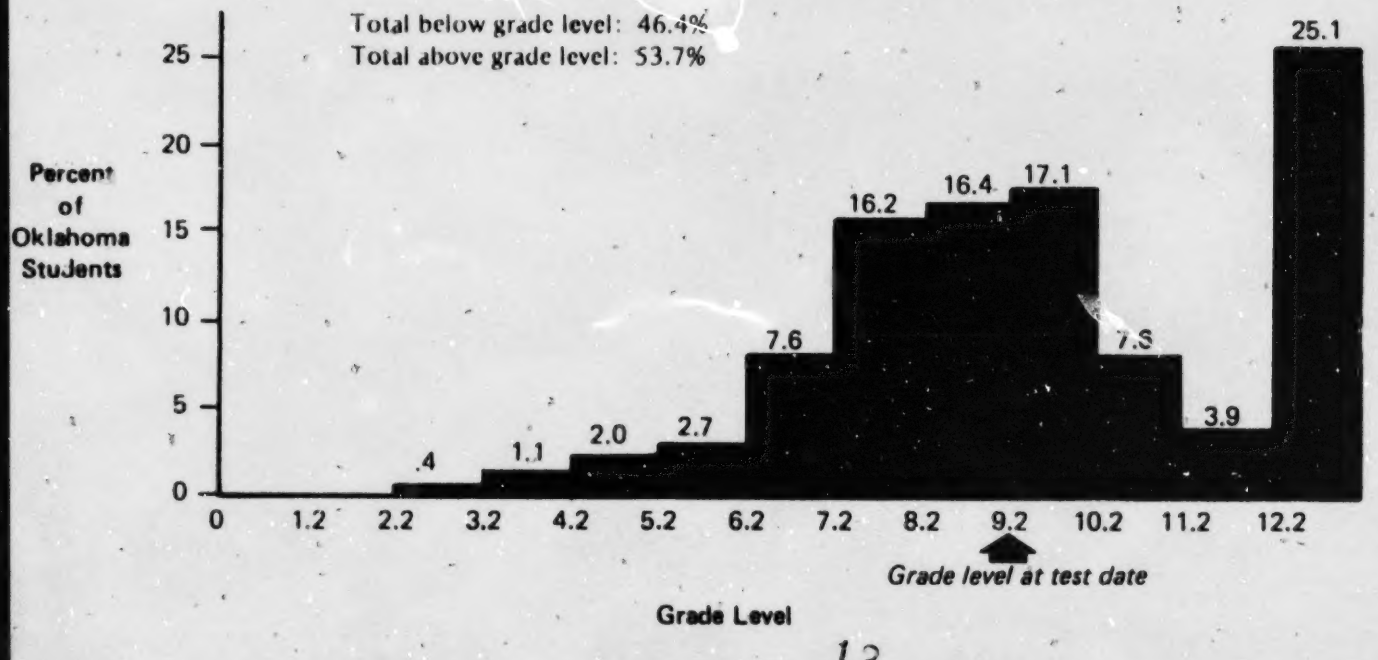


Figure 7

THIRD GRADE: Basic Skills

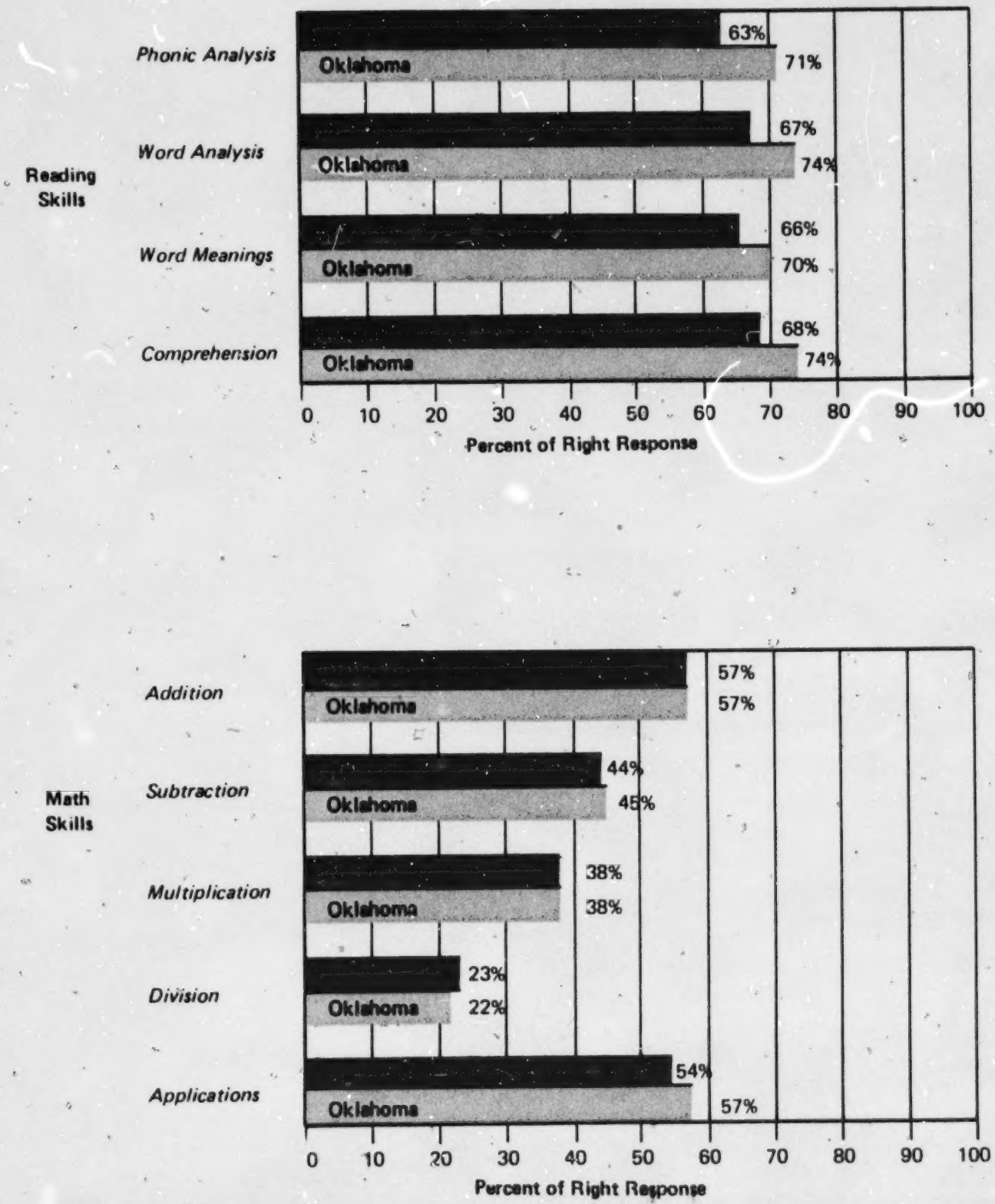
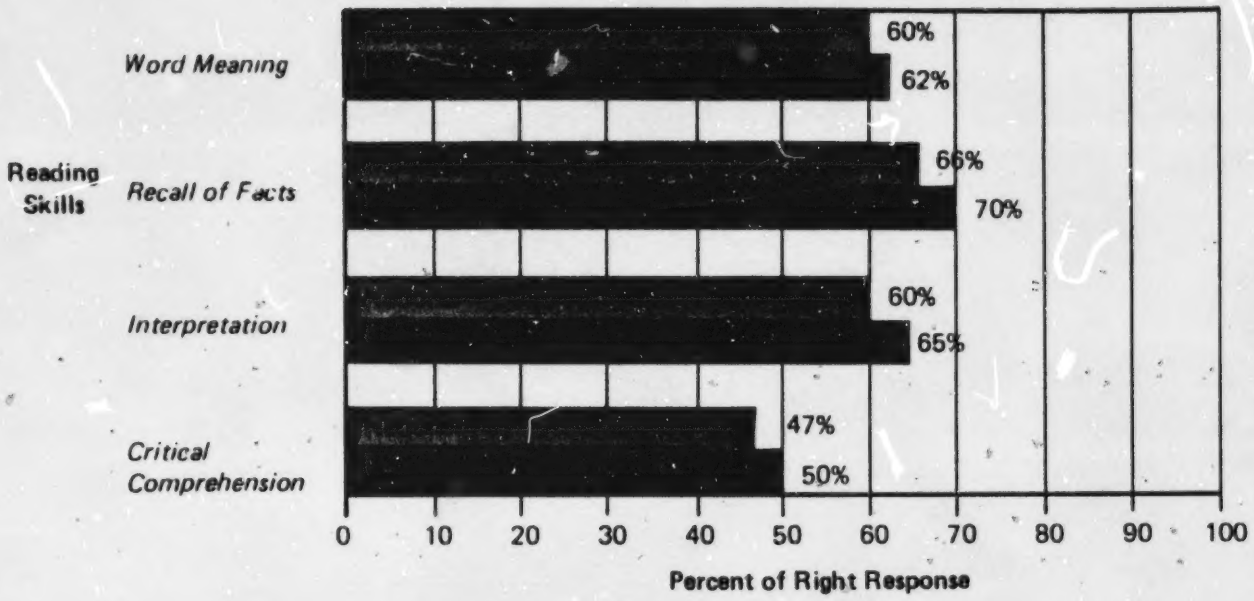


Figure 8

SIXTH GRADE: Basic Skills



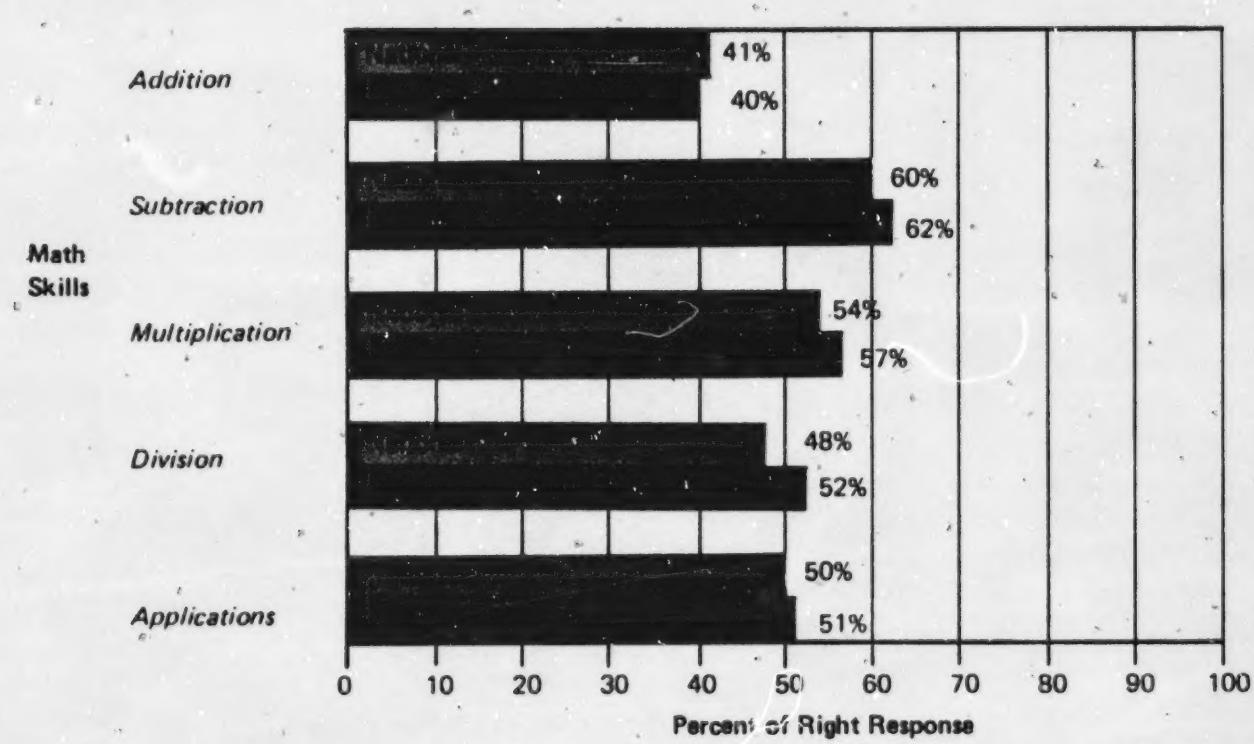
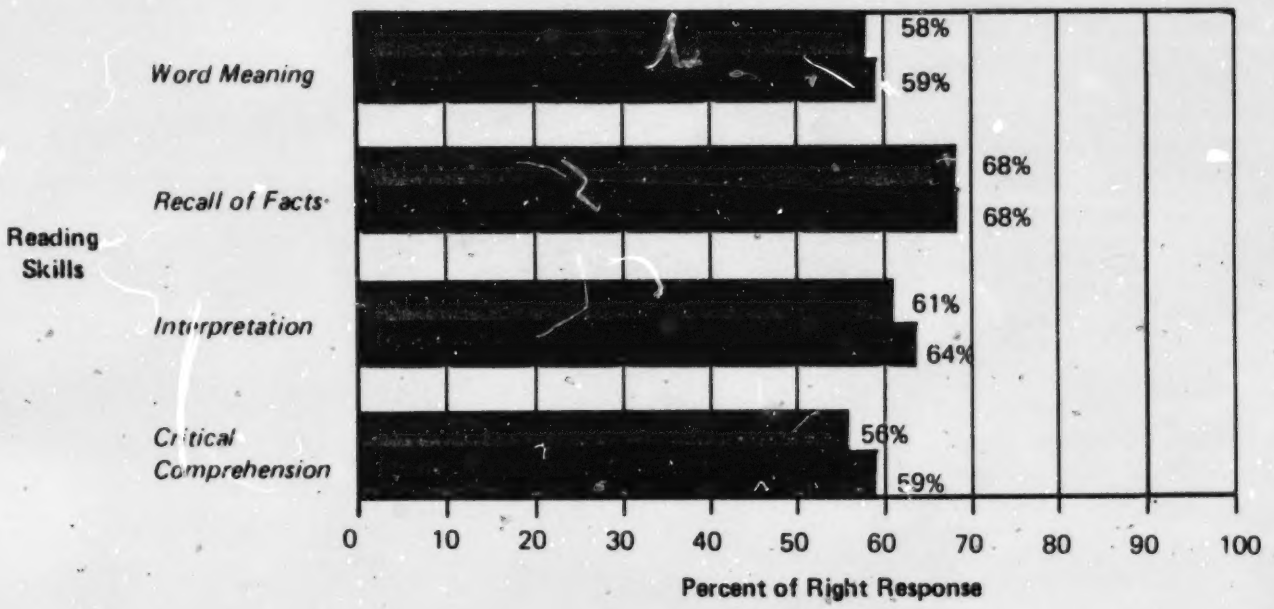


Figure 9

NINTH GRADE: Basic Skills



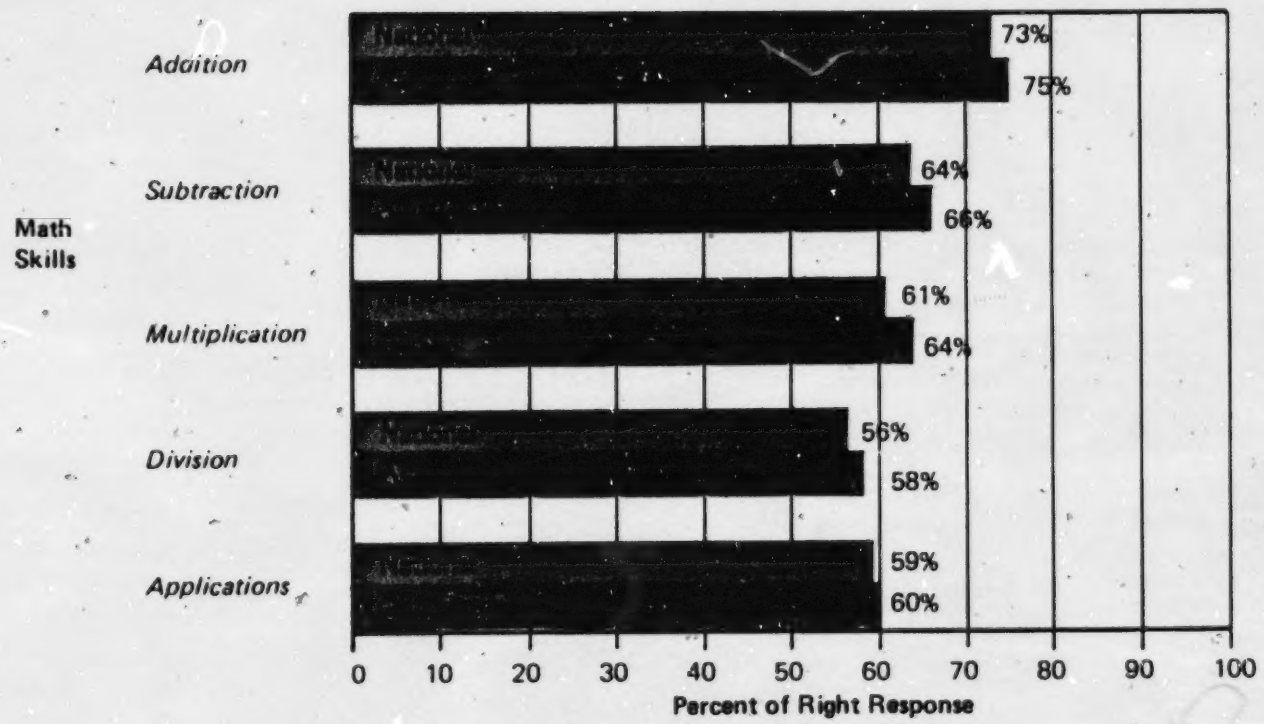


Table 2

State Average Grade Level Scores Compared with the National Norm

	Third Grade		Sixth Grade		Ninth Grade	
	Number Students	Grade Level	Number Students	Grade Level	Number Students	Grade Level
National Sample (Norm)		3.2		6.2		9.2
Oklahoma Sample						
Reading Total	1714	3.5	1711	6.5	1949	9.6
Vocabulary		3.4		6.5		9.5
Comprehension		3.5		6.7		9.9
Math Total	1699	3.3	1704	6.3	1938	9.4
Computation		3.2		6.3		9.8
Concepts and Applications		3.3		6.3		9.3

Twelfth Grade

The Senior High Assessment of Reading Performance (SHARP) was administered to 1,590 senior students. The twelfth grade students were chosen by the same sampling procedure as were the students in grades 3, 6 and 9. (See sampling procedure for details on sampling.)

Development of SHARP

The development of SHARP is explained in the following paragraph:

> The Senior High Assessment of Reading Performance (SHARP) is a diagnostic and evaluative instrument that measures the ability of senior high school students to read and respond to materials typically encountered by adults in their daily lives. SHARP was originally devised by the Reading Support Service Center of the Los Angeles Unified School District, and is now being developed cooperatively by CTB/McGraw-Hill and the Los Angeles district. The development of SHARP has included an extensive review of all printed materials that students are likely to encounter in adult life, full-scale field testing, careful collection and analysis of research data on the test, and an intensive content review by instructional and evaluation experts.

Purpose for Administering SHARP

The purpose for administering the SHARP test to the sample of seniors was an attempt to draw some conclusions about the reading

ability of twelfth graders. Many twelfth graders do not take the ACT or SAT test as a junior or senior; therefore, it is difficult to draw any overall conclusions as to the reading ability of twelfth graders as it relates to practical everyday life. It is felt that the sampling procedure utilized in this study was scientifically sound, and the conclusions and results shown are descriptive of the state's twelfth grade population in that they reflect the ability of the students to read and interpret materials that they may encounter in everyday life as an adult.

SHARP Objectives

The SHARP objectives were developed from studies of the printed materials that students will be likely to encounter in daily life and from field tests, data research and evaluation review. The following is a brief list of the categories of objectives measured by the test:

Section 1 — Following Directions — deals with understanding and completing forms such as rent receipts, membership applications, library card applications, voter registration forms, unemployment insurance forms, job applications, changes of address, rental applications, letters, and social security applications.

Section 2 — Getting Information — assesses the ability to read and understand written materials such as labels, signs, warranties, banking forms, recipes, driver's license tests, contracts, classified ads, and newspaper articles.

Section 3 — Using Maps and Forms — assesses the student's ability to read and interpret materials such as road maps, TV listings, area code maps, receipts, income tax forms, bank statements, job resumes, bills, and dictionaries.

Each specific objective was tested by four multiple-choice test items pertinent to the objective. The criterion for achieving each objective was a correct response for at least three of the four items. Overall, there were thirty objectives and a total of 120 questions. The criterion for passing the total test was set at 70 percent or 84 of the 120 items. Use of the SHARP in other states has resulted in a rate of 85 percent to 95 percent of students passing at the 70 percent mastery level.

Table 3

Summary Data of SHARP Results

	Number of Students	% of Students
Students passing at the 70% level of understanding (84 correct responses out of total of 120)	1,473	92.7%
Students NOT passing; scoring below the 70% level	117	7.4%
TOTAL number of students in sample	1,590	

Table 4

Subtest Results

		High and Low Score	Average Score
Section I:	Following Directions	40 - 1	35.1
Section II:	Getting Information	40 - 1	36.0
Section III:	Using Maps and Forms	40 - 3	34.8

Figure 10

Reading Performance Total Test

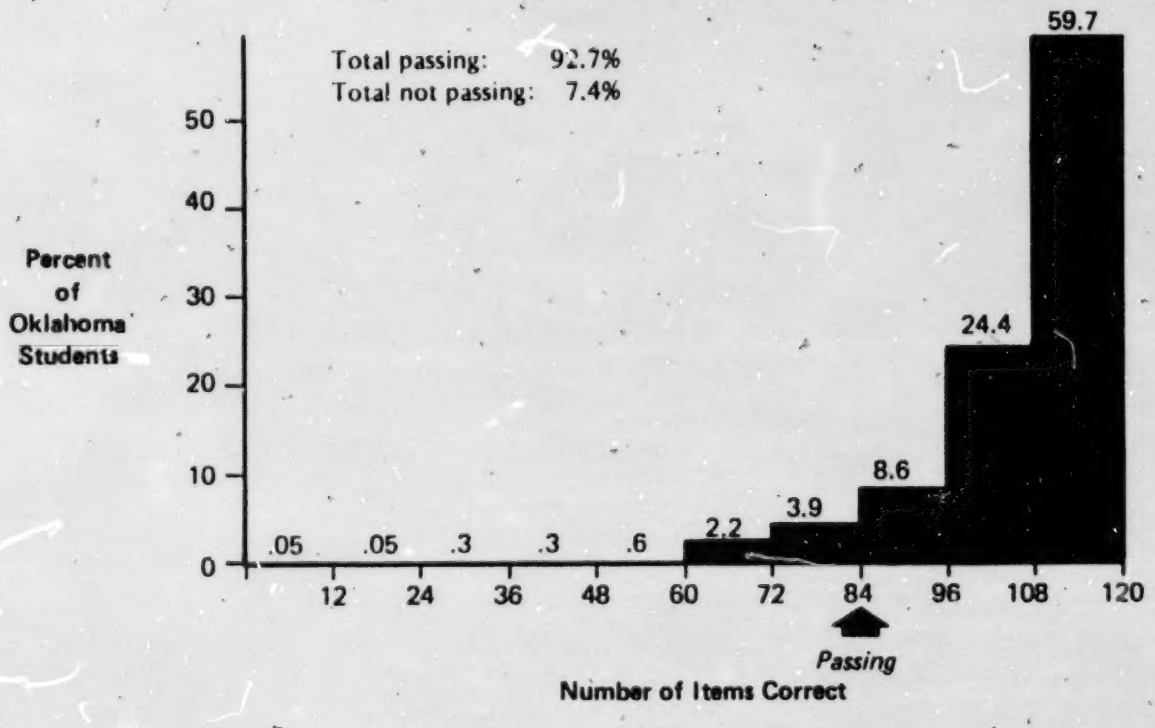


Table 5

State Results by Category Objectives

Total Number = 1 590

Objective	Number Of Students Achieving Objective	Number Of Students Not Achieving Objective	Percent Of Students Achieving Each Objective
SECTION I: Following Directions			
Library Card Application	1,542	48	97%
Membership Application	1,383	207	87%
Business Letter	1,542	48	97%
Unemployment Insurance Claim	1,511	79	95%
Employment Application	1,542	48	97%
Change of Address Form	1,320	270	83%
Apartment Rental	1,113	477	70%
Telephone Directory	1,415	175	89%
Absentee Voter's Ballot	1,208	382	76%
Social Security Card	1,399	191	88%
SECTION II: Getting Information			
Traffic Signs	1,542	48	97%
Packaging Labels	1,479	111	93%
Classified Ads	1,495	95	94%
Warranties	1,367	223	86%
Personal Check	1,542	48	97%
Driver's License Test	1,447	143	91%
Financial Agreement	1,415	175	89%
Newspaper Article	1,463	127	92%
Charge Account Agreement	1,447	143	91%
Recipe	1,479	111	93%
SECTION III: Using Maps and Forms			
TV Listings	1,463	127	92%
Highway Map	1,511	79	95%
Street and Freeway Map	1,495	95	94%
Area Code Map	1,447	143	91%
Cash Register Receipt	1,447	143	91%
Tax Form 1040A	1,320	270	83%
Job Resumes	1,479	111	93%
Deposit Slips	1,065	525	67%
Utility Bill	1,304	286	82%
Dictionary Entry	1,352	238	85%
% of Students Achieving Above 70% for Total Test			**93%**

Table 6

Category Objectives
With Highest and Lowest Percent Passing

Category Objectives
With Highest Percent of Students Passing

Objective	*% Passing*
Library Card Application	97%
Business Letter	97%
Traffic Signs	97%
Personal Check	97%
Highway Map	95%
Unemployment Insurance Claim	95%

Category Objectives
With Lowest Percent of Students Passing

Objective	*% Passing*
Change of Address Form	83%
Tax Form 1040A	83%
Utility Bill	82%
Absentee Voter's Ballot	76%
Apartment Rental	70%
Deposit Slip	67%

Conclusions for Grade Twelve

As indicated earlier in this report, the SHARP test is criterion referenced and does not have national norms. Therefore, it is impossible to compare exact data from this test with results from tests administered in other states. Because of the nature of this test, responses to test items indicated either mastery or non-mastery and, therefore, cannot be interpreted to indicate that students in Oklahoma achieve more or less than a national norm.

1. Approximately 93 percent of the students in the sample achieved at or above the 70 percent mastery level (84 correct responses out of a possible 120).
2. Approximately 7 percent of the students in the sample did not attain mastery at the 70 percent level.
3. Of the thirty objectives in the test, the six receiving the highest mastery level, in descending order, were those objectives dealing with: Library Card Application, Business Letters, Traffic Signs, Personal Check, Highway Map, Unemployment Insurance Claim.
4. Of the thirty objectives in the test, the six receiving the lowest mastery level, in descending order, were those objectives dealing with: Change of Address Form, Tax Form 1040A, Utility Bill, Absentee Voter's Ballot, Apartment Rental, Deposit Slips.
5. Even though the SHARP test is not a norm-based test, it is apparent that seniors in Oklahoma public schools are achieving as well as or better than students in most other states that have given the test. Other schools have achieved mastery rates ranging from 85 percent to 95 percent.
6. Generally, the SHARP tested reading ability in the three major categories of following directions, getting information and interpreting maps and forms. Students achieved a higher average level of mastery in the second section of the test; i.e., reading for information.